

V. REMARKS

Claim 4 is rejected under 35 USC 112, second paragraph, as indefinite for allegedly failing to particularly point out and distinctly claimed the subject matter of the invention. The claim is amended to obviate the rejection. Withdrawal of the rejection is respectfully requested.

Claims 1, 2, 4, 6 and 9 are rejected under 35 USC 102 (b) as being anticipated by Kendall (U.S. Patent No. 6,667,492). The rejection is respectfully traversed.

Kendall teaches a substrate having a plurality of substantially parallel quantum ridges on a surface thereof. Each pair of adjacent quantum ridges of the plurality of quantum ridges had a pitch of 9.4 to 54 angstroms and is separated by a groove having a width of 6 to 51 angstroms and a depth of 4 to 30,000 angstroms. The quantum ridges are aligned in the $\langle 110 \rangle$ direction and each of the quantum ridges is straight.

Claim 1, as amended, is directed to a silicon semiconductor substrate that includes a plane inclined from a $\{110\}$ plane as a main surface of the substrate and a series of steps arranged at an atomic level substantially along a $\langle 110 \rangle$ orientation on the main surface. Claim 1 recites that at least most ones of the series of steps extend continuously along the main surface of the substrate.

It is respectfully submitted that the rejection is improper because the applied art fails to teach each and every element of claim 1 as amended. Specifically, it is respectfully submitted that the applied art fails to teach a series of steps arranged at an atomic level substantially along a $\langle 110 \rangle$ orientation on the main surface with at least most ones of the series of steps extend continuously along the main surface of the substrate.

By contrast, Kendall states, in column 6, lines 33-39:

The ridges may have occasional atomic steps in them along their length due to the slight variations from perfect flatness of the wafer surface, but after each misalignment step, the ridges and can establish themselves in the same $\langle 110 \rangle$ direction. In addition there may be occasional reconstruction faults in the surface, especially on the (5 5 12) surface.

As a result, it is respectfully submitted that claim 1 is allowable over the applied art.

Claims 2, 4, 6 and 9 depend from claim 1 and include all of the features of claim 1. Thus, it is respectfully submitted that the dependent claims are allowable at least for the reason claim 1 is allowable as well as for the features they recite.

Withdrawal of the rejection is respectfully requested.

Claim 5 is rejected under 35 USC 102 (b) as being anticipated by Sasaki (JP 2002-289819). The rejection is respectfully traversed.

Sasaki appears to teach a silicon crystal base board having its main surface oriented at an angle between 0° and 0.5°.

Claim 5, as amended, is directed to a silicon semiconductor substrate that has a plane inclined from a {110} plane toward a $\langle 100 \rangle$ orientation as a main surface. Claim 5 recites that the main surface is mirror polished and has a series of steps arranged at an atomic level substantially along a $\langle 110 \rangle$ orientation on the main surface. Furthermore, claim 5 recites that at least most ones of the series of steps extend continuously along the main surface.

It is respectfully submitted that the rejection is improper because the applied art fails to teach each and every element of claim 5 as amended. Specifically, it is respectfully submitted that the applied art fails to teach as a main surface having a series of steps arranged at an atomic level substantially along a $\langle 110 \rangle$ orientation on the main surface with at least most ones of the series of steps extend continuously along the main surface. As a result, it is respectfully submitted that claim 5 is allowable over the applied art.

Withdrawal of the rejection is respectfully requested.

Claims 3 and 8 are rejected under 35 USC 103 (a) as being unpatentable over Kizuki (U.S. Patent No. 5,882,952) in view of Kendall. The rejection is respectfully traversed.

Kizuki teaches a semiconductor device that includes forming a multi-atomic steps all on a (1 1 0) semiconductor substrate inclined at an angle toward the [001] direction or the [111] direction.

Claims 3 and 8 depend from claim 1 via claim 2 and include all of the features of claim 1. Thus, it is respectfully submitted that the dependent claims are allowable at least for the reason claim 1 is allowable as well as for the features they recite.

Withdrawal of the rejection is respectfully requested.

Claim 7 is rejected under 35 USC 103 (a) as being unpatentable over Sasaki as applied to claim 5 and further in view of Ebara. The rejection is respectfully traversed.

Ebara teaches a silicon epitaxial wafer and a method for producing it.

Claim 5 depends from claims 1-5 and includes all of the features of claims 1-5. Thus, it is respectfully submitted that the dependent claim is allowable at least for the reasons claims 1-5 are allowable as well as for the features it recites.

Withdrawal of the rejection is respectfully requested.

Claim 10 is rejected under 35 USC 103 (a) as being unpatentable over Sasaki as modified by Kendall applied to claim 6 and further in view of Ebara. The rejection is respectfully traversed.

Claim 10 depends from claim 5 and claim 1 (via claim 2) and includes all of the features of these claims. Thus, it is respectfully submitted that the dependent claim is allowable at least for the reasons claims 1 and 5 are allowable as well as for the features it recites.

Withdrawal of the rejection is respectfully requested.

Newly-added claim 11 also includes features not shown in the applied art.

It is respectfully submitted that the pending claims are believed to be in condition for allowance over the prior art of record. Therefore, this Amendment is believed to be a complete response to the outstanding Office Action. Further, Applicants assert that there are also reasons other than those set forth above why the pending claims are patentable. Applicants hereby reserve the right to set forth further arguments and remarks supporting the patentability of their claims, including

the separate patentability of the dependent claims not explicitly addressed herein, in future papers.

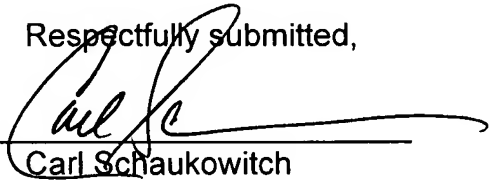
In view of the foregoing, reconsideration of the application and allowance of the pending claims are respectfully requested. Should the Examiner believe anything further is desirable in order to place the application in even better condition for allowance, the Examiner is invited to contact Applicants' representative at the telephone number listed below.

Should additional fees be necessary in connection with the filing of this paper or if a Petition for Extension of Time is required for timely acceptance of the same, the Commissioner is hereby authorized to charge Deposit Account No. 18-0013 for any such fees and Applicant(s) hereby petition for such extension of time.

Respectfully submitted,

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